CLAIMS:

Please cancel claims 1-21 without prejudice. Please add new claims 22-55.

1-21. (cancelled)

22. (new) A method for relaying, at a network, application data between first and second nodes, comprising the steps of:

establishing a packet communication link between the first node and the network that implements packet communications between the first node and the network;

establishing, over the packet communication link, one or more logical communication connections between the first node and the network in order to communicate the application data between the first node and one or more second nodes; and

while relaying the application data between the first node and the one or more second nodes, conducting at the network communication protocol conversions on the application data to be sent to the first node and received therefrom.

23. (new) A method according to claim 22, wherein establishing the packet communication link comprises registering the first node at the network for packet communication between the first node and the network.

24. (new) A method according to claim 23, wherein registering the first node comprises authenticating the first node, using subscriber information in the registration request.

25. (new) A method according to claim 24, wherein authenticating the first node comprises searching a subscriber database in the network for the subscriber information.

26. (new) A method according to claim 25, wherein the subscriber information of the first node includes an originator ID uniquely assigned to the first node by the network.

27. (new)   A method according to claim 23, wherein establishing the packet communication link further comprises registering the packet communication.

28. (new)   A method according to claim 22, wherein the packet communication link includes at least one wireless portion therein and performs control and management of wireless communications.

29. (new)   A method according to claim 28, wherein the first node is a wireless mobile terminal.

30. (new)   A method according to claim 29, wherein the packet communication link performs mobility management of the first node.

31. (new)   A method according to claim 22, wherein establishing one or more logical communication connections comprises receiving a connection setup request from the first node and returning an acknowledgement to the first node.

32. (new)   A method according to claim 22, wherein the logical communication connection ensures delivery of application data between the first node and the network.

33. (new)   A method according to claim 22, wherein a header is added to the application data to implement a logical communication connection between the first node and the network, wherein the header includes a logical number that identifies the logical communication connection.

34. (new)   A method according to claim 22, wherein the one or more second nodes are data sources located outside the network.

35. (new)   A method according to claim 34, wherein the one or more second nodes are connected to the network over a public data communication network.

36. (new)   A method according to claim 35, wherein TCP/IP is implemented in communications between the network and the one or more second nodes.

37. (new)   A relay apparatus for relaying application data between first and second nodes, comprising

at least first and second communication protocol stacks that implement different communication protocols for communication with the first and second nodes and relay the application data between the first and second nodes while conducting communication protocol conversions on the application data relayed between them,

the first communication protocol stack comprising:

packet communication link layers that establish a packet communication link between the first node and the relay apparatus that implements packet communications between the first node and the relay apparatus; and

a transport layer, located on the packet communication link layers, that establishes, over the packet communication link, one or more logical communication connections between the first node and the relay apparatus in order to communicate the application data between the first node and one or more second nodes.

38. (new)   A relay apparatus according to claim 37, wherein the packet communication link includes at least one wireless portion therein and performs control and management of wireless communications.

39. (new)   A relay apparatus according to claim 38, wherein the first node is a wireless mobile terminal.

40. (new)   A relay apparatus according to claim 39, wherein the packet communication link performs mobility management of the first node.

41. (new)   A relay apparatus according to claim 37, wherein the logical communication connection ensures delivery of application data between the first node and the network.

42. (new)   A relay apparatus according to claim 37, wherein the transport layer adds a header to the application data to implement a logical communication connection

between the first node and the network, wherein the header includes a logical number that identifies the logical communication connection.

43. (new)   A relay apparatus according to claim 37, wherein the relay apparatus communicates with the one or more second nodes over a public data communication network.

44. (new)   A relay apparatus according to claim 37, wherein the second communication protocol stack implements TCP/IP in communications between the relay apparatus and the one or more second nodes.

45. (new)   A terminal that exchanges application data with one or more corresponding nodes via a network, comprising a communication protocol stack that implements a first communication protocol, the communication protocol stack comprising:

     packet communication link layers that establish a packet communication link between the terminal and the network that implements packet communications between the terminal and the network; and

     a transport layer, located on the packet communication link layers, that establishes, over the packet communication link, one or more logical communication connections between the terminal and the network in order to communicate the application data between the terminal and the one or more corresponding nodes, the application data being transmitted between the network and the one or more corresponding nodes, using a second communication protocol that differs from the first communication protocol.

46. (new)   A terminal according to claim 45, wherein the terminal sends a registration request to the network to initiate establishing the packet communication link.

47. (new)   A terminal according to claim 45, wherein the packet communication link includes at least one wireless portion therein and performs control and management of wireless communications.

48. (new)   A terminal according to claim 47, wherein the terminal is a wireless mobile terminal.

49. (new)   A terminal according to claim 48, wherein the packet communication link performs mobility management of the terminal.

50. (new)   A terminal according to claim 45, wherein the terminal sends to the network a connection setup request to initiate establishing the logical communication connection.

51. (new)   A terminal according to claim 45, wherein the logical communication connection ensures delivery of application data between the terminal and the network.

52. (new)   A terminal according to claim 45, wherein the transport layer adds a header to the application data to implement a logical communication connection between the terminal and the network, wherein the header includes a logical number that identifies the logical communication connection.

53. (new)   A terminal according to claim 45, wherein the one or more corresponding nodes are data sources located outside the network.

54. (new)   A terminal according to claim 53, wherein the one or more corresponding nodes are connected to the network over a public data communication network.

55. (new)   A terminal according to claim 35, wherein the second communication protocol implements TCP/IP in communications between the network and the one or more corresponding nodes.